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**TITLE V PERMIT RENEWAL APPLICATION
FOR**

**KINDER MORGAN LIQUIDS TERMINALS, LLC
5880 NW ST. HELENS ROAD
PORTLAND, OREGON 97210
OPERATING PERMIT NO. 26-2028**

Submitted to:

*Oregon Department of Environmental Quality
Northwest Region Portland Office
Air Quality Program
2020 SW 4th Avenue, Suite 400
Portland, Oregon 97201-4987*

Submitted by:

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1.0 INTRODUCTION

The Kinder Morgan Liquids Terminals, LLC (Kinder Morgan) facility consists of the Linnton Terminal and Willbridge Terminal located in Portland, Oregon. The Kinder Morgan facility is regulated under the Oregon Department of Environmental Quality (ODEQ) and the two terminals operate together under Title V permit number 26-2028. The existing permit was issued on December 17, 2003 and expires January 1, 2009. In accordance with OAR 340-218-0040(1)(a)(D), a renewal application is due 12 months before the expiration date of the current permit. Therefore, this Title V renewal application is being submitted to meet the application deadline of January 1, 2008.

2.0 TITLE V RENEWAL

This renewal application provides detailed descriptions of changes to the Title V permit requested in the Renewal Application Information Form AP106, included in Appendix A. Kinder Morgan is requesting emission unit changes and updates. An increase to the Plant Site Emissions Limit (PSEL) is not required for these changes.

Kinder Morgan requests the following changes to the existing Title V Operating Permit:

2.1 Cover Changes

Please change the Responsible Official to be identified by one of two job titles – Director of Operations or Director of Northern Operations

Please change the facility contact person to Mr. Gregory Westling, Area Manager. The title and phone number will stay the same.

2.2 Hazardous Air Pollutant Speciation Update

At the time of the 1995 Title V permit application submittal, emissions of hazardous air pollutants (HAPs) from the facility were estimated using an August 1991, State of California Air Resources Board Speciation Manual. Currently, the Environmental Protection Agency (EPA) provides on its website technical reports for the Emission Inventory Improvement Program. Table 11.3-2 in Volume III, Chapter 11 (Gasoline Marketing – Stage I and Stage II) provides updated HAP speciation profiles to be applied to VOC emissions from gasoline. The gasoline type, baseline, was assumed to be the most conservative HAP profile and is provided below:

HAP	Baseline (% of VOC Emissions)
2,2,4-Trimethylpentane	0.8
Benzene	0.9
Ethylbenzene	0.1
Hexane	1.6
MTBE	0
Naphthalene	0.05
Toluene	1.3
Xylene	0.5

Emissions of HAPs were re-estimated using the new speciation profile and are provided on Table 1. The facility is still considered a HAP minor source, since HAP emissions are still below the thresholds of 10 tons/year of a single HAP and 25 tons/year of combined HAPs.

2.3 Compliance Assurance Monitoring

Compliance Assurance Monitoring (CAM), as required in 40 CFR Part 64, applies to the Kinder Morgan facility. However, as given in section 64.5, facilities which have received a completeness determination from the permitting authority for a Title V permit application by April 20, 1998, are not required to submit CAM plans until the Title V permit is renewed. Since a completeness determination was given by ODEQ after the original application submittal, the requirement for compliance with the Part 64 regulations did not have to be met until the permit is renewed. This renewal application addresses those sources for which CAM will apply.

In general, CAM requirements apply to emission units subject to an emission limit or standard, where an add-on control device is used to comply with the applicable limit or standard, and the emission unit has pre-controlled potential emissions above the major source limit (100 tons/year). There are a few exemptions and the CAM rule would not apply to emission units subject to certain federal regulations issued after 1990 (e.g. certain 40 CFR Part 60, 61, and 63 rules) and where continuous compliance monitoring is already specified in an operating permit.

To determine if CAM requirements were applicable to emission units at the Kinder Morgan facility, all emission units were evaluated to determine if they are subject to an emission limitation or standard, used a control device to achieve compliance with the limitation or standard, and are not subject to federal regulations issued after 1990.

It appears that that Willbridge vapor recover unit (W-VRU) and the Linnton vapor recovery unit (L-VRU) both have the potential of pre-controlled emissions above 100 tons/year of volatile organic compounds (VOCs). Both control devices have emission limits under 40 CFR Part 60 Subpart XX, but this federal regulation was issued before 1990; therefore, the CAM requirements are applicable to W-VRU and L-VRU.

The L-VRU has not been in operation for some time and Kinder Morgan is thinking of replacing this control device with a new unit. Since Kinder Morgan does not expect the L-VRU to be used until a decision about obtaining a replacement is made by mid-2008, Kinder Morgan requests to delay providing a CAM plan for the L-VRU until then. An addendum to this renewal application will be submitted with the required information or information on a proposed new control device will be provided.

A CAM plan for the W-VRU, using Form CP709, is provided in Appendix B.

2.4 Ethanol Project

The 2007 Oregon Legislative Assembly passed House Bill 2210, which includes a renewable fuel standard mandate that initiates minimum fuel blending requirements statewide. Once the production capacity of ethanol in the state reaches 40 million gallons per year, the bill requires retail gasoline dealers to sell only gasoline that contains at least ten percent ethanol, within three months of that date.

Currently, Kinder Morgan only adds ethanol into gasoline at the truck rack during the winter months. With this new requirement, the amount of ethanol used at the Kinder Morgan terminals will increase

for year round availability. To accommodate this increased usage, the following modifications are being made to existing facility equipment.

- The Willbridge railcar unloading system will be updated and additional loading positions for receipt of ethanol will be installed. The new loading positions will be added to the FGTVOC emissions unit component count.
- Tank 139 will have an internal floating roof installed. This tank retrofit is already allowed by Condition 4 of the existing permit. Kinder Morgan will submit a Notice of Completion to the ODEQ when the retrofit has been completed.
- New piping and associated components will be installed for the required ethanol modifications. The FGTVOC emission unit will be updated with a new component count.
- Loading arms on the Willbridge truck rack (TRACK) will be replaced. This will not be considered reconstruction or a modification to the source, and 40 CFR Part 60 Subpart XX (Standards of Performance for Bulk Gasoline Terminals) will continue to apply to this source.

2.5 Other Proposed Projects

Kinder Morgan has other proposed projects they would like to include into the Title V permit for completion within the next permit term.

- New tanks will be built and existing tanks will be retrofitted with floating roofs. A detailed description of the proposed changes are provided in sections 2.6 and 2.7.
- New piping and associated components will be installed to tie new tanks to marine, truck and pipeline capabilities. Piping component updates are discussed in section 2.8.
- New piping and associated components will be installed to allow intra-terminal transfer of ethanol or product between the Linnton Terminal, the Willbridge terminal, and other neighboring terminals. Piping component updates are discussed in section 2.8.
- Kinder Morgan is contemplating a new vapor control device for the Linnton terminal. The control device will be either a carbon adsorption vapor recovery unit or an incinerator system. Kinder Morgan will be finalizing future facility plans mid-next year and will submit an addendum to this renewal application with the proposed new control device.

2.6 Proposed New Tanks

Kinder Morgan requests the option to construct 8 new storage tanks at the Willbridge Terminal during the upcoming permit term. These tanks would consist of four internal floating roof tanks (INTANKS) that would be subject to 40 CFR Part 60 Subpart Kb regulations (Standards of Performance for Volatile Organic Liquid Storage Vessels for which construction, reconstruction, or modification commenced after July 23, 1984), and four fixed roof tanks (FIXTANK).

These new storage tanks will be used for a variety of petroleum products. Emissions from the new fixed roof storage tanks were conservatively estimated storing Jet A fuel. Emissions from the new internal floating roof tanks were conservatively estimated storing gasoline. Emissions were calculated using EPA TANKS 4.0 using typical tank parameters for Kinder Morgan. Typical actual

VOC emissions from these new tanks were calculated to be 19.78 tons/yr. No increase in the VOC PSEL is requested for these new tanks.

Please include these tank descriptions in the emission unit identification of Condition 3 and Condition 5. Device forms DV212 for the proposed new storage tanks are included in Appendix C. The TANKS 4.0 emission reports are included in Appendix D.

2.7 Existing Tanks and Proposed Tank Retrofits

Kinder Morgan proposes to include two existing fixed roof storage tanks on PGE Harborton property (PGEH1 and PGEH2) into the permit. Emissions from these two tanks are also included in the estimated VOC emissions in Section 2.6. Additionally, Tank L55008, a fixed roof tank, will be retrofitted with a new internal floating roof. Tanks L11017 and L11019 are currently internal floating roof tanks, but will also be retrofitted with new floating roofs. These tank retrofits will be allowed under Condition 4 of the existing Title V permit. The tank emission unit description will need to be updated with these tanks. The proposed emission unit changes are provided in Section 2.9.

2.8 Piping Component Updates

Kinder Morgan plans to install new piping components for the various proposed projects around the Willbridge and Linnton terminals. The number of piping components "I" grouped under emission until FGTVOG is required to be updated at the time of permit renewal, per Condition 53.f.ii. Kinder Morgan is still designing the proposed facility changes and will update the piping component count when the plans are finalized in mid-2008.

2.9 Emission Unit Revisions – Tank Emission Unit

Please modify the storage tank emission unit descriptions to incorporate the proposed tank changes to be made at the terminal during the next permit term, as shown below:

Condition 3.a. – FIXTANK – please remove tanks L55008, W138, W139, and W200.

Please add the following tanks to Condition 3.a.:

FIXTANK Description	FIXTANK Device ID	Rated Capacity (gal)	Year Installed/modified
All fixed roof tanks at the Linnton Terminal.	PGEH1	4,200,000	Unknown / Future
	PGEH2	4,200,000	Unknown / Future
All fixed roof tanks at the Willbridge Terminal.	W204	3,360,000	Future
	W205	3,360,000	Future
	W206	2,100,000	Future
	W207	2,100,000	Future

Please revise Condition 3.c. to include the following tanks:

INTANK Description	INTANK Device ID	Rated Capacity (gal)	Year Installed/modified
All internal floating roof tanks at the Linnton Terminal.	L11019	469,896	1941 / Future
	L55008	2,310,000	1933 / Future
	L11017	469,938	1941 / Future

INTANK Description	INTANK Device ID	Rated Capacity (gal)	Year Installed/modified
All internal floating roof tanks at the Willbridge Terminal.	W138	567,000	Pre-1960 / 2005
	W139	567,000	Pre-1960 / 2008
	W200	5,040,000	Future
	W201	5,040,000	Future
	W202	3,360,000	Future
	W203	3,360,000	Future

Please include the following tanks into Condition 5:

INTANK _{NSPS} Description	INTANK _{NSPS} Device ID	Rated Capacity (gallons)	Yr. Installed/modified
Any FIXTANK, EXTANK, INTANK that will be rebuilt/modified to INTANK per Condition 4, and become subject to the NSPS – Subpart Kb requirements.	--	--	2009 or after
Existing internal floating roof storage tanks that are subject to NSPS Subpart Kb requirements.	138	567,000	Pre-1960 / 2005
	139	567,000	Pre-1960 / 2008
New internal floating roof tanks	W200	5,040,000	2009 or after
	W201	5,040,000	
	W202	3,360,000	
	W203	3,360,000	

TABLES

Table 1
Hazardous Air Pollutant Emission Estimates from Petroleum Products
Potential to Emit Emissions Estimates
Kinder Morgan, Linnton and Willbridge Terminals

Terminal	Annual VOC Emissions ^(a)				
	FIXTANK, EXTANK INTANK (tons/year)	TRACK (tons/year)	MLOAD (tons/year)	FGTVOC (tons/year)	TRACK FGT (tons/year)
Linnton	20.6	4.6	3.39	0.55	6.30
Willbridge	79	70.1	35.05	0.98	14.35
Totals:	99.6	74.7	38.4	1.53	20.65

Analyte	Weight Percent HAP Concentration ^(f) (%)	Annual HAP Emissions ⁽¹⁾					Analyte Total Emissions (tons/year)
		FIXTANK, EXTANK INTANK (tons/year)	TRACK (tons/year)	MLOAD (tons/year)	FGTVOC (tons/year)	TRACK FGT	
2,2,4-Trimethylpentane	0.8	0.80	0.60	0.31	0.012	0.17	1.89
Benzene	0.9	0.90	0.67	0.35	0.014	0.19	2.12
Ethylbenzene	0.1	0.10	0.07	0.038	0.002	0.021	0.23
Hexane	1.6	1.59	1.20	0.62	0.024	0.33	3.76
Naphthalene	0.05	0.05	0.04	0.019	0.001	0.010	0.12
Toluene	1.3	1.29	0.97	0.50	0.020	0.27	3.05
O-xylene, M-xylene, P-xylene	0.5	0.50	0.37	0.19	0.008	0.10	1.17
Emission Unit Total:		5.23	3.92	2.03	0.08	1.09	12.35

Notes:

(1) HAP emission rate = (VOC emissions [tons VOC/year]) X (HAP weight percent [%]/100)

References:

- (a) To calculate the maximum HAP emissions, it is assumed that all emissions are from gasoline products. Annual VOC emissions taken from December 2002 Title V Renewal Application
- (f) HAP concentration from Table 11.3-2, HAP Percent of VOC Emissions from Chapter 11, Volume III of the Emission Inventory Improvement Program (January 2001). Percentages were based on baseline emission factors, which will estimate maximum HAP emissions. Emissions are assumed to be less, since Portland will be required to blend gasoline year round with 10% ethanol.

APPENDIX A
RENEWAL APPLICATION INFORMATION (FORM AP106)

**Oregon Title V Air Operating Permit
Renewal Application Information**

**FORM AP106
Answer Sheet**

Facility name: Kinder Morgan Liquids Terminals, LLC Permit Number: 26-2028

1.	Contact Person:	Name	Mr. Gregory Westling
		Title	Area Manager
		Phone number	(503) 220-1263
		e-mail address	<u>Gregory_Westling@kindermorgan.com</u>
		Fax number	(503) 220-1270
2.	Permit cover page changes:		Yes, please revise the Responsible Official to be identified by job title only - Director of Operations or Director of Northern Operations. Additionally, please change the facility contact to Mr. Gregory Westling.
3.	Were there any off-permit changes?		No
	If yes, integrate changes into renewal permit? [if no, explain]		--
4.	Were there any section 502(b)(10) changes?		No
	If yes, integrate changes into renewal permit? [if no, explain]		--
5.	Process information:	Production	Production will remain as estimated in the Title V Permit Review Report.
		Fuel usage	Natural Gas 463.86 MMscf/yr Fuel Oil 750.72 Mgal/yr
		Raw material usage	Not Applicable
6.	Operating schedule	hours/day	24
		days/week	7
		weeks/year	52
		Seasonal months	No
7	Number of employees		18
8.	Will there be any changes to the operating scenario(s)? [if yes, describe and attach form AP103]		No
9.	Will there be any new, modified, or reconstructed stationary sources or air pollution control equipment? [if yes, attach appropriate form(s)]		Yes, Kinder Morgan proposed to build eight new storage tanks for completion within the next permit term. Forms DV212 for these proposed tanks are provided in Appendix C.
10.	Are the current emissions units correctly identified and defined in the permit? [if no, provide necessary revisions]		No, an update to the tank emission unit is provided in the application text.
11.	Does the CAM rule apply to any of the emissions units? [if yes, list the pollutant-specific emissions units that the rules apply to and attach form CP709]		Yes, a CAM plan for the Willbridge vapor recovery unit is provided in Appendix B.

**Oregon Title V Air Operating Permit
Renewal Application Information**

**FORM AP106
Answer Sheet**

12.	Does the accidental release prevention regulation apply to the facility? [if yes, list the regulated substances present in processes at the facility and identify the applicable program]	No
13.	Are there any other new applicable requirements? [if yes, list the new applicable requirements, emissions units, and attach a series CP700 form that describes the proposed monitoring]	No
14.	Are there any requested changes in the Plant Site Emissions Limits (PSEL) other than those identified in item 9 above? [if yes answer the following]	No, changes to the PSEL are not requested.
	Are the changes a result of having better emissions information such as a new emission factor from a recent source test? If yes, complete and attach any applicable emissions forms from series ED600.	Not Applicable
	Are the changes due to an increase in production? If yes, complete and attach the applicable emissions form from series ED600. If the emissions increases are greater than the significant emission rate (SER), the owner or operator will need to provide an assessment of the air quality impact in accordance with OAR 340-222-0041(3)(b).	Not Applicable
15.	Is the source in compliance with all of the conditions of the current permit? [if no, attach a compliance schedule]	Yes
16.	Are there any requested changes to testing conditions? [if yes, identify the condition, the requested change, and the reason]	No
17.	Are there any requested changes to monitoring conditions other than those being replaced by CAM? [if yes, identify the condition, the requested change, and the reason]	No
18.	Are there any requested changes to recordkeeping conditions? [if yes, identify the condition, the requested change, and the reason]	No
19.	Are there any requested changes to reporting conditions? [if yes, identify the condition, the requested change, and the reason]	No
20.	Are there any requested changes to the non-applicable requirements? [if yes, identify the condition, the requested change, and the reason]	No
21.	Are there any other requested changes to any condition? [if yes, identify the condition, the requested change, and the reason]	No

**Oregon Title V Air Operating Permit
Renewal Application Information**

**FORM AP106
Answer Sheet**

Statement of Certification:

Based on information and belief formed after reasonable inquiry, the statements and information in this document and any attachments are true, accurate and complete. I also certify that all statements made concerning compliance, which are based on monitoring required by the permit but not required to be submitted to the Department, are true, accurate and complete based on information and belief formed after reasonable inquiry

Gregg Lies

Name of Responsible Official

Director of Northern Operations

Title of Responsible Official



Signature of Responsible Official

12/18/07

Date

APPENDIX B
COMPLIANCE ASSURANCE MONITORING (FORM CP709)

Compliance Assurance Monitoring

FORM CP709 Answer Sheet

Facility name: Kinder Morgan Liquids Terminals, LLC

Permit Number: 26-2028

1.	Emissions Unit ID:	W-MLOAD, W-TRACK
2.	Pollutant:	VOC
3.	Applicable requirement (Regulatory reference and brief summary):	<p>40 CFR Part 60 Subpart XX (40 CFR 60.502) VOC limit of 35 milligrams of total organic compounds per liter of gasoline loaded at the truck rack.</p> <p>OAR 340-232-0110 VOC limit of 5.7 grams per cubic meter (or milligrams per liter) of gasoline loaded or reduction of 95 percent by weight of VOC vapors displaced and collected during marine loading operations.</p>
4.	Control Device ID:	W-VRU (Willbridge Vapor Recovery Unit)
5.	Indicators of emission control performance (check one or more of the following that apply):	
	Actual emissions	X
	Predicted emissions	
	Process parameter(s) (describe)	
	Control device parameter(s) (describe)	
	Inspection and maintenance activities (describe)	
6.	Indicator range, ranges, or operating condition (if unknown at this time, specify procedure for establishing values)	
	Value(s)	The continuous emissions monitor has two indicator set points. When the VOC concentration reaches 0.5% by volume (corresponding to 5.7 mg/L VOC) or greater, a high emissions alarm is triggered, which automatically calls the operator. The operator will then shut down marine dock product loading. The second emissions alarm is set when the VOC concentration reaches 1.8% by volume (corresponding to 35 mg/L). When this alarm is triggered, the truck loading rack will be shut down via an automated interlock system. An exceedance of the set point will trigger an investigation, corrective action, and a reporting requirement.
	Basis	The indicator set points were set at the VOC emissions limits of the marine loading rack and the truck loading rack.
	Has the emissions unit and/or control device been changed?	No
	Procedure	Not Applicable
	Test plan and schedule	Not Applicable

Compliance Assurance Monitoring**FORM CP709
Answer Sheet**

7.	Monitoring performance criteria	
	Location and installation specifications of monitoring device(s)	The analyzer is located at the carbon adsorber outlet.
	QA/QC	The continuous emissions monitor is calibrated quarterly by the VRU manufacturer.
	Data averaging period	30 minute rolling average
	Frequency of data collection	The VRU has a continuous monitor that records VOC outlet concentrations on a strip chart.
8.	CAM Justification: A CEM is used to monitor the carbon adsorber outlet VOC concentration to ensure breakthrough is not occurring. This monitor provides a direct indicator of compliance with the VOC emissions limit since it continuously measures the outlet concentration.	
9.	If the proposed CAM will not be operational when the permit is issued provide the following:	
	Reason	Not Applicable
	Implementation schedule	Not Applicable

APPENDIX C
STORAGE TANK DEVICE FORMS (FORM DV212)

Device\Process Form
VOC Storage Tank

FORM DV212
Answer Sheet

Facility name: Kinder Morgan Liquids Terminals, LLC

Permit Number: 26-2028

1.	Tank ID number or label	W200	W201	W202	W203
2.	Date installation/construction commenced	Within the next permit term	Within the next permit term	Within the next permit term	Within the next permit term
3.	Date installed	Future	Future	Future	Future
4.	Special control requirements? [if yes, describe]	No	No	No	No
5.	Manufacturer	Unknown	Unknown	Unknown	Unknown
6.	Rated capacity (gallons)	120,000 bbls / 5,040,000 gals	120,000 bbls / 5,040,000 gals	80,000 bbls / 3,360,000 gals	80,000 bbls / 3,360,000 gals
7.	Tank height (ft)	45	45	45	45
8.	Tank diameter (ft)	140	140	120	120
9.	Tank age (years)	New	New	New	New
10.	Submerged fill pipe?	Yes	Yes	Yes	Yes
11.	Type of tank (specify)	Internal Floating Roof	Internal Floating Roof	Internal Floating Roof	Internal Floating Roof
12.	Underground?	No	No	No	No
	If underground, specify type of tube and vapor return.	--	--	--	--
13.	Above ground vapor control information:				
	Pipe material				
	Pipe size				
	Piping drainage (continuous drain downward or condensate collection tank – if condensate collection, attach a description)				
	Isolation valve installed in piping?				
14.	Pressure vacuum relief valves:				
	Vent pressure settings (psia)				
	Months in which relief valves removed (specify)				
15.	Pressure conservation vent? (if yes, specify pressure setting – psia)				
16.	Fixed roof tanks:				
	Roof color	--	--	--	--
	Shell color	--	--	--	--
	Average vapor space height (ft)	--	--	--	--
	Shell condition (specify)	--	--	--	--

	Tank ID number	W200	W201	W202	W203
17	Floating roof tanks:				
	Type of construction (specify)	Welded	Welded	Welded	Welded
	Condition (specify)	Good	Good	Good	Good
	Tank color	White	White	White	White
	Deck type (specify)	Welded	Welded	Welded	Welded
18.	External floating roof tanks, seal type (specify)	--	--	--	--
19.	Internal floating roof tanks:				
	Seal type (specify)	Mechanical shoe primary, rim-mounted secondary			
	Number of columns	9	9	7	7
	Effective column diameter (ft)	1	1	1	1
	Total deck seam length (ft)				
	Deck fitting types – access hatch				
	bolted cover, gasketed	1	1	1	1
	unbolted cover, gasketed				
	unbolted cover, ungasketed				
	Deck fitting types - Automatic gauge float well				
	bolted cover, gasketed				
	unbolted cover, gasketed				
	unbolted cover, ungasketed				
	Deck fitting types – column well				
	Built up column – sliding cover, gasketed	9	9	7	7
	Built up column – sliding cover, ungasketed				
	Pipe column – flexible fabric sleeve seal				
	Pipe column – sliding cover, gasketed				
	Pipe column – sliding cover, ungasketed				
	Deck fitting types – ladder well				
	sliding cover, gasketed	1	1	1	1
	sliding cover, ungasketed				

	Tank ID number	W200	W201	W202	W203
19.	Deck fitting types – sample well or pipe				
	Slotted pipe – sliding cover, gasketed				
	Slotted pipe – sliding cover, ungasketed				
	Sample well – slit fabric seal, 10% open area	1	1	1	1
	Stub drain – 1-inch diameter				
	Deck fitting type – roof leg or hanger will				
	Adjustable	52	52	41	41
	fixed				
	Deck fitting type – vacuum breaker				
	Weighted mechanical actuation, gasketed	2	2	2	2
20.	Maximum liquid loading rate (gal/hr)	336,000	336,000	336,000	336,000
	Submerged fill at out-loading (describe)				
22.	Material(s) stored				
	Type of material	Petroleum and chemical liquids			
	Normal annual throughput (gal/yr)	120,960,000	120,960,000	80,640,000	80,640,000
	Normal turnovers per year	24	24	24	24
	Density (lbs/gal)	Varies with product			
	Molecular weight	Varies with product			
	Average storage temperature (°F)	Ambient			
	Vapor pressure (psi)	Greater than 1.52 psia			

Device\Process Form
VOC Storage Tank

FORM DV212
Answer Sheet

Facility name: Kinder Morgan Liquids Terminals, LLC

Permit Number: 26-2028

1.	Tank ID number or label	W204	W205	W206	W207
2.	Date installation/construction commenced	Within the next permit term	Within the next permit term	Within the next permit term	Within the next permit term
3.	Date installed	Future	Future	Future	Future
4.	Special control requirements? [if yes, describe]	No	No	No	No
5.	Manufacturer	Unknown	Unknown	Unknown	Unknown
6.	Rated capacity (gallons)	80,000 bbls / 3,360,000 gals	80,000 bbls / 3,360,000 gals	50,000 bbls / 2,100,000 gals	50,000 bbls / 2,100,000 gals
7.	Tank height (ft)	45	45	45	45
8.	Tank diameter (ft)	120	120	100	100
9.	Tank age (years)	New	New	New	New
10.	Submerged fill pipe?	Yes	Yes	Yes	Yes
11.	Type of tank (specify)	Fixed Roof	Fixed Roof	Fixed Roof	Fixed Roof
12.	Underground?	No	No	No	No
	If underground, specify type of tube and vapor return.	--	--	--	--
13.	Above ground vapor control information:				
	Pipe material				
	Pipe size				
	Piping drainage (continuous drain downward or condensate collection tank – if condensate collection, attach a description)				
	Isolation valve installed in piping?				
14.	Pressure vacuum relief valves:				
	Vent pressure settings (psia)				
	Months in which relief valves removed (specify)				
15.	Pressure conservation vent? (if yes, specify pressure setting – psia)				
16.	Fixed roof tanks:				
	Roof color	White	White	White	White
	Shell color	White	White	White	White
	Average vapor space height (ft)	23	23	23	23
	Shell condition (specify)	Good	Good	Good	Good

	Tank ID number	W204	W205	W206	W207
17	Floating roof tanks:				
	Type of construction (specify)	--	--	--	--
	Condition (specify)	--	--	--	--
	Tank color	--	--	--	--
	Deck type (specify)	--	--	--	--
18.	External floating roof tanks, seal type (specify)	--	--	--	--
19.	Internal floating roof tanks:				
	Seal type (specify)	--	--	--	--
	Number of columns	--	--	--	--
	Effective column diameter (ft)	--	--	--	--
	Total deck seam length (ft)	--	--	--	--
	Deck fitting types – access hatch				
	bolted cover, gasketed	--	--	--	--
	unbolted cover, gasketed	--	--	--	--
	unbolted cover, ungasketed	--	--	--	--
	Deck fitting types - Automatic gauge float well				
	bolted cover, gasketed	--	--	--	--
	unbolted cover, gasketed	--	--	--	--
	unbolted cover, ungasketed	--	--	--	--
	Deck fitting types – column well				
	Built up column – sliding cover, gasketed	--	--	--	--
	Built up column – sliding cover, ungasketed	--	--	--	--
	Pipe column – flexible fabric sleeve seal	--	--	--	--
	Pipe column – sliding cover, gasketed	--	--	--	--
	Pipe column – sliding cover, ungasketed	--	--	--	--
	Deck fitting types – ladder well				
	sliding cover, gasketed	--	--	--	--
	sliding cover, ungasketed	--	--	--	--

	Tank ID number	W204	W205	W206	W207
19.	Deck fitting types – smple well or pipe	--	--	--	--
	Slotted pipe – sliding cover, gasketed	--	--	--	--
	Slotted pipe – sliding cover, ungasketed	--	--	--	--
	Sample well – slit fabric seal, 10% open area	--	--	--	--
	Stub drain – 1-inch diameter	--	--	--	--
	Deck fitting type – roof leg or hanger will				
	Adjustable	--	--	--	--
	fixed	--	--	--	--
	Deck fitting type – vacuum breaker				
	Weighted mechanical actuation, gasketed	--	--	--	--
Weighted mechanical actuation, ungasketed	--	--	--	--	
20.	Maximum liquid loading rate (gal/hr)	336,000	336,000	336,000	336,000
21	Submerged fill at out-loading (describe)				
22.	Material(s) stored				
	Type of material	Petroleum and chemical liquids			
	Normal annual throughput (gal/yr)	80,640,000	80,640,000	50,400,000	50,400,000
	Normal turnovers per year	24	24	24	24
	Density (lbs/gal)	Varies with product			
	Molecular weight	Varies with product			
	Average storage temperature (°F)	Ambient			
	Vapor pressure (psi)	Less than 1.52 psia			

Device/Process Form
VOC Storage Tank

FORM DV212
Answer Sheet

Facility name: Kinder Morgan Liquids Terminals, LLC Permit Number: 26-2028

1.	Tank ID number or label	PGEH1	PGEH2		
2.	Date installation/construction commenced	Unknown	Unknown		
3.	Date installed	Unknown	Unknown		
4.	Special control requirements? [if yes, describe]	No	No		
5.	Manufacturer	Unknown	Unknown		
6.	Rated capacity (gallons)	100,000 bbls or 4,200,000 gals	100,000 bbls or 4,200,000 gals		
7.	Tank height (ft)	45	45		
8.	Tank diameter (ft)	150	150		
9.	Tank age (years)				
10.	Submerged fill pipe?	Yes	Yes		
11.	Type of tank (specify)	Fixed Roof	Fixed Roof		
12.	Underground?	No	No		
	If underground, specify type of tube and vapor return.	--	--		
13.	Above ground vapor control information:				
	Pipe material				
	Pipe size				
	Piping drainage (continuous drain downward or condensate collection tank – if condensate collection, attach a description)				
	Isolation valve installed in piping?				
14.	Pressure vacuum relief valves:				
	Vent pressure settings (psia)				
	Months in which relief valves removed (specify)				
15.	Pressure conservation vent? (if yes, specify pressure setting – psia)				
16.	Fixed roof tanks:				
	Roof color	White	White		
	Shell color	White	White		
	Average vapor space height (ft)	23	23		
	Shell condition (specify)	Good	Good		

	Tank ID number	PGEH1	PGEH2		
17	Floating roof tanks:				
	Type of construction (specify)	--	--		
	Condition (specify)	--	--		
	Tank color	--	--		
	Deck type (specify)	--	--		
18.	External floating roof tanks, seal type (specify)	--	--		
19.	Internal floating roof tanks:				
	Seal type (specify)	--	--		
	Number of columns	--	--		
	Effective column diameter (ft)	--	--		
	Total deck seam length (ft)	--	--		
	Deck fitting types – access hatch				
	bolted cover, gasketed	--	--		
	unbolted cover, gasketed	--	--		
	unbolted cover, ungasketed	--	--		
	Deck fitting types - Automatic gauge float well				
	bolted cover, gasketed	--	--		
	unbolted cover, gasketed	--	--		
	unbolted cover, ungasketed	--	--		
	Deck fitting types – column well				
	Built up column – sliding cover, gasketed	--	--		
	Built up column – sliding cover, ungasketed	--	--		
	Pipe column – flexible fabric sleeve seal	--	--		
	Pipe column – – sliding cover, gasketed	--	--		
	Pipe column – – sliding cover, ungasketed	--	--		
	Deck fitting types – ladder well				
	sliding cover, gasketed	--	--		
	sliding cover, ungasketed	--	--		

	Tank ID number	PGEH1	PGEH2		
19.	Deck fitting types – smple well or pipe	--	--		
	Slotted pipe – sliding cover, gasketed	--	--		
	Slotted pipe – sliding cover, ungasketed	--	--		
	Sample well – slit fabric seal, 10% open area	--	--		
	Stub drain – 1-inch diameter	--	--		
	Deck fitting type – roof leg or hanger will				
	Adjustable	--	--		
	fixed	--	--		
	Deck fitting type – vacuum breaker				
	Weighted mechanical actuation, gasketed	--	--		
	Weighted mechanical actuation, ungasketed	--	--		
20.	Maximum liquid loading rate (gal/hr)	336,000	336,000		
21	Submerged fill at out-loading (describe)				
22.	Material(s) stored				
	Type of material	Petroleum and chemical liquids			
	Normal annual throughput (gal/yr)	126,904,444	126,904,444		
	Normal turnovers per year	24	24		
	Density (lbs/gal)	Varies with product			
	Molecular weight	Varies with product			
	Average storage temperature (°F)	Ambient			
	Vapor pressure (psi)	Less than 1.52 psia			

APPENDIX D
TANKS 4.0 EMISSION REPORTS

TANKS 4.0.9d
Emissions Report - Summary Format
Tank Identification and Physical Characteristics

Identification

User Identification:	PGEH1
City:	
State:	
Company:	
Type of Tank:	Vertical Fixed Roof Tank
Description:	

Tank Dimensions

Shell Height (ft):	45.00
Diameter (ft):	150.00
Liquid Height (ft) :	40.00
Avg. Liquid Height (ft):	20.00
Volume (gallons):	5,287,685.14
Turnovers:	24.00
Net Throughput(gal/yr):	126,904,443.45
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Roof Characteristics

Type:	Dome
Height (ft)	2.00
Radius (ft) (Dome Roof)	150.00

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig)	0.03

Meteorological Data used in Emissions Calculations: Portland, Oregon (Avg Atmospheric Pressure = 14.75 psia)

TANKS 4.0.9d
Emissions Report - Summary Format
Liquid Contents of Storage Tank

PGEH1 - Vertical Fixed Roof Tank

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F)			Liquid Bulk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
		Avg.	Min.	Max.		Avg.	Min.	Max.					
Jet A	All	55.06	50.48	59.64	53.57	0.0073	0.0061	0.0084	130.0000			130.00	Option 1: VP50 = .006 VP60 = .0085

TANKS 4.0.9d
Emissions Report - Summary Format
Individual Tank Emission Totals

Emissions Report for: Annual

PGEH1 - Vertical Fixed Roof Tank

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Jet A	2,853.75	898.96	3,752.71

TANKS 4.0.9d
Emissions Report - Summary Format
Tank Identification and Physical Characteristics

Identification

User Identification:	PGEH2
City:	
State:	
Company:	
Type of Tank:	Vertical Fixed Roof Tank
Description:	

Tank Dimensions

Shell Height (ft):	45.00
Diameter (ft):	150.00
Liquid Height (ft) :	40.00
Avg. Liquid Height (ft):	21.00
Volume (gallons):	5,287,685.14
Turnovers:	24.00
Net Throughput(gal/yr):	126,904,443.45
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Roof Characteristics

Type:	Dome
Height (ft)	2.00
Radius (ft) (Dome Roof)	150.00

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig)	0.03

Meteorological Data used in Emissions Calculations: Portland, Oregon (Avg Atmospheric Pressure = 14.75 psia)

TANKS 4.0.9d
Emissions Report - Summary Format
Liquid Contents of Storage Tank

PGEH2 - Vertical Fixed Roof Tank

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F)			Liquid Bulk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
		Avg.	Min.	Max.		Avg.	Min.	Max.					
Jet A	All	55.06	50.48	59.64	53.57	0.0073	0.0061	0.0084	130.0000			130.00	Option 1: VP50 = .006 VP60 = .0085

TANKS 4.0.9d
Emissions Report - Summary Format
Individual Tank Emission Totals

Emissions Report for: Annual

PGEH2 - Vertical Fixed Roof Tank

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Jet A	2,853.75	864.72	3,718.47

TANKS 4.0.9d
Emissions Report - Summary Format
Tank Identification and Physical Characteristics

Identification

User Identification: W200
City:
State:
Company:
Type of Tank: Internal Floating Roof Tank
Description: Proposed New IFR

Tank Dimensions

Diameter (ft): 140.00
Volume (gallons): 5,040,000.00
Turnovers: 24.00
Self Supp. Roof? (y/n): N
No. of Columns: 9.00
Eff. Col. Diam. (ft): 1.00

Paint Characteristics

Internal Shell Condition: Light Rust
Shell Color/Shade: White/White
Shell Condition: Good
Roof Color/Shade: White/White
Roof Condition: Good

Rim-Seal System

Primary Seal: Mechanical Shoe
Secondary Seal: Rim-mounted

Deck Characteristics

Deck Fitting Category: Detail
Deck Type: Welded

Deck Fitting/Status**Quantity**

Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1
Column Well (24-in. Diam.)/Built-Up Col.-Sliding Cover, Gask.	9
Ladder Well (36-in. Diam.)/Sliding Cover, Gasketed	1
Roof Leg or Hanger Well/Adjustable	52
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	2
Slotted Guide-Pole/Sample Well/Gask. Sliding Cover, w. Float, Wiper	2

Meteorological Data used in Emissions Calculations: Portland, Oregon (Avg Atmospheric Pressure = 14.75 psia)

TANKS 4.0.9d
Emissions Report - Summary Format
Liquid Contents of Storage Tank

W200 - Internal Floating Roof Tank

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F)			Liquid Bulk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
		Avg.	Min.	Max.		Avg.	Min.	Max.					
Gasoline (RVP 11)	All	55.06	50.48	59.64	53.57	5.2421	N/A	N/A	65.0000			92.00	Option 4: RVP=11, ASTM Slope=3

TANKS 4.0.9d
Emissions Report - Summary Format
Individual Tank Emission Totals

Emissions Report for: Annual

W200 - Internal Floating Roof Tank

	Losses(lbs)				
Components	Rim Seal Loss	Withdrawal Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Gasoline (RVP 11)	597.18	173.43	5,913.54	0.00	6,684.15

TANKS 4.0.9d
Emissions Report - Summary Format
Tank Identification and Physical Characteristics

Identification

User Identification: W201
City:
State:
Company:
Type of Tank: Internal Floating Roof Tank
Description: Proposed New IFR

Tank Dimensions

Diameter (ft): 140.00
Volume (gallons): 5,040,000.00
Turnovers: 24.00
Self Supp. Roof? (y/n): N
No. of Columns: 9.00
Eff. Col. Diam. (ft): 1.00

Paint Characteristics

Internal Shell Condition: Light Rust
Shell Color/Shade: White/White
Shell Condition: Good
Roof Color/Shade: White/White
Roof Condition: Good

Rim-Seal System

Primary Seal: Mechanical Shoe
Secondary Seal: Rim-mounted

Deck Characteristics

Deck Fitting Category: Detail
Deck Type: Welded

Deck Fitting/Status**Quantity**

Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1
Column Well (24-in. Diam.)/Built-Up Col.-Sliding Cover, Gask.	9
Ladder Well (36-in. Diam.)/Sliding Cover, Gasketed	1
Roof Leg or Hanger Well/Adjustable	52
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	2
Slotted Guide-Pole/Sample Well/Gask. Sliding Cover, w. Float, Wiper	2

Meteorological Data used in Emissions Calculations: Portland, Oregon (Avg Atmospheric Pressure = 14.75 psia)

TANKS 4.0.9d
Emissions Report - Summary Format
Liquid Contents of Storage Tank

W201 - Internal Floating Roof Tank

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F)			Liquid Bulk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
		Avg.	Min.	Max.		Avg.	Min.	Max.					
Gasoline (RVP 11)	All	55.06	50.48	59.64	53.57	5.2421	N/A	N/A	65.0000			92.00	Option 4: RVP=11, ASTM Slope=3

TANKS 4.0.9d
Emissions Report - Summary Format
Individual Tank Emission Totals

Emissions Report for: Annual**W201 - Internal Floating Roof Tank**

	Losses(lbs)				
Components	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Gasoline (RVP 11)	597.18	173.43	5,913.54	0.00	6,684.15

TANKS 4.0.9d
Emissions Report - Summary Format
Tank Identification and Physical Characteristics

Identification

User Identification: W202
City:
State:
Company:
Type of Tank: Internal Floating Roof Tank
Description: Proposed New IFR

Tank Dimensions

Diameter (ft): 120.00
Volume (gallons): 3,360,000.00
Turnovers: 24.00
Self Supp. Roof? (y/n): N
No. of Columns: 7.00
Eff. Col. Diam. (ft): 1.00

Paint Characteristics

Internal Shell Condition: Light Rust
Shell Color/Shade: White/White
Shell Condition: Good
Roof Color/Shade: White/White
Roof Condition: Good

Rim-Seal System

Primary Seal: Mechanical Shoe
Secondary Seal: Rim-mounted

Deck Characteristics

Deck Fitting Category: Detail
Deck Type: Welded

Deck Fitting/Status**Quantity**

Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1
Column Well (24-in. Diam.)/Built-Up Col.-Sliding Cover, Gask.	7
Ladder Well (36-in. Diam.)/Sliding Cover, Gasketed	1
Roof Leg or Hanger Well/Adjustable	41
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	2
Slotted Guide-Pole/Sample Well/Gask. Sliding Cover, w. Float, Wiper	2

Meterological Data used in Emissions Calculations: Portland, Oregon (Avg Atmospheric Pressure = 14.75 psia)

TANKS 4.0.9d
Emissions Report - Summary Format
Liquid Contents of Storage Tank

W202 - Internal Floating Roof Tank

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F)			Liquid Bulk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
		Avg.	Min.	Max.		Avg.	Min.	Max.					
Gasoline (RVP 11)	All	55.06	50.48	59.64	53.57	5.2421	N/A	N/A	65.0000			92.00	Option 4: RVP=11, ASTM Slope=3

TANKS 4.0.9d
Emissions Report - Summary Format
Individual Tank Emission Totals

Emissions Report for: Annual

W202 - Internal Floating Roof Tank

	Losses(lbs)				
Components	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Gasoline (RVP 11)	511.87	134.13	4,826.53	0.00	5,472.53

TANKS 4.0.9d
Emissions Report - Summary Format
Tank Identification and Physical Characteristics

Identification

User Identification: W203
City:
State:
Company:
Type of Tank: Internal Floating Roof Tank
Description: Proposed New IFR

Tank Dimensions

Diameter (ft): 120.00
Volume (gallons): 3,360,000.00
Turnovers: 24.00
Self Supp. Roof? (y/n): N
No. of Columns: 7.00
Eff. Col. Diam. (ft): 1.00

Paint Characteristics

Internal Shell Condition: Light Rust
Shell Color/Shade: White/White
Shell Condition: Good
Roof Color/Shade: White/White
Roof Condition: Good

Rim-Seal System

Primary Seal: Mechanical Shoe
Secondary Seal: Rim-mounted

Deck Characteristics

Deck Fitting Category: Detail
Deck Type: Welded

Deck Fitting/Status**Quantity**

Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1
Column Well (24-in. Diam.)/Built-Up Col.-Sliding Cover, Gask.	7
Ladder Well (36-in. Diam.)/Sliding Cover, Gasketed	1
Roof Leg or Hanger Well/Adjustable	41
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	2
Slotted Guide-Pole/Sample Well/Gask. Sliding Cover, w. Float, Wiper	2

Meterological Data used in Emissions Calculations: Portland, Oregon (Avg Atmospheric Pressure = 14.75 psia)

TANKS 4.0.9d
Emissions Report - Summary Format
Liquid Contents of Storage Tank

W203 - Internal Floating Roof Tank

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F)			Liquid Bulk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
		Avg.	Min.	Max.		Avg.	Min.	Max.					
Gasoline (RVP 11)	All	55.06	50.48	59.64	53.57	5.2421	N/A	N/A	65.0000			92.00	Option 4: RVP=11, ASTM Slope=3

TANKS 4.0.9d
Emissions Report - Summary Format
Individual Tank Emission Totals

Emissions Report for: Annual**W203 - Internal Floating Roof Tank**

	Losses(lbs)				
Components	Rim Seal Loss	Withdrawal Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Gasoline (RVP 11)	511.87	134.13	4,826.53	0.00	5,472.53

TANKS 4.0.9d
Emissions Report - Summary Format
Tank Identification and Physical Characteristics

Identification

User Identification:	W204
City:	
State:	
Company:	
Type of Tank:	Vertical Fixed Roof Tank
Description:	Proposed new FIXTANK

Tank Dimensions

Shell Height (ft):	45.00
Diameter (ft):	120.00
Liquid Height (ft) :	42.00
Avg. Liquid Height (ft):	21.00
Volume (gallons):	3,360,000.00
Turnovers:	24.00
Net Throughput(gal/yr):	80,640,000.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Roof Characteristics

Type:	Dome
Height (ft)	2.00
Radius (ft) (Dome Roof)	120.00

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig)	0.03

Meteorological Data used in Emissions Calculations: Portland, Oregon (Avg Atmospheric Pressure = 14.75 psia)

TANKS 4.0.9d
Emissions Report - Summary Format
Liquid Contents of Storage Tank

W204 - Vertical Fixed Roof Tank

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F)			Liquid Bulk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
		Avg.	Min.	Max.		Avg.	Min.	Max.					
Jet A	All	55.06	50.48	59.64	53.57	0.0073	0.0061	0.0084	130.0000			130.00	Option 1: VP50 = .006 VP60 = .0085

TANKS 4.0.9d
Emissions Report - Summary Format
Individual Tank Emission Totals

Emissions Report for: Annual**W204 - Vertical Fixed Roof Tank**

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Jet A	1,813.38	553.42	2,366.80

TANKS 4.0.9d
Emissions Report - Summary Format
Tank Identification and Physical Characteristics

Identification

User Identification:	W205
City:	
State:	
Company:	
Type of Tank:	Vertical Fixed Roof Tank
Description:	Proposed new FIXTANK

Tank Dimensions

Shell Height (ft):	45.00
Diameter (ft):	120.00
Liquid Height (ft) :	42.00
Avg. Liquid Height (ft):	21.00
Volume (gallons):	3,360,000.00
Turnovers:	24.00
Net Throughput(gal/yr):	80,640,000.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Roof Characteristics

Type:	Dome
Height (ft)	2.00
Radius (ft) (Dome Roof)	120.00

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig)	0.03

Meterological Data used in Emissions Calculations: Portland, Oregon (Avg Atmospheric Pressure = 14.75 psia)

TANKS 4.0.9d
Emissions Report - Summary Format
Liquid Contents of Storage Tank

W205 - Vertical Fixed Roof Tank

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F)			Liquid Bulk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
		Avg.	Min.	Max.		Avg.	Min.	Max.					
Jet A	All	55.06	50.48	59.64	53.57	0.0073	0.0061	0.0084	130.0000			130.00	Option 1: VP50 = .006 VP60 = .0085

TANKS 4.0.9d
Emissions Report - Summary Format
Individual Tank Emission Totals

Emissions Report for: Annual**W205 - Vertical Fixed Roof Tank**

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Jet A	1,813.38	553.42	2,366.80

TANKS 4.0.9d
Emissions Report - Summary Format
Tank Identification and Physical Characteristics

Identification

User Identification:	W206
City:	
State:	
Company:	
Type of Tank:	Vertical Fixed Roof Tank
Description:	Proposed new FIXTANK

Tank Dimensions

Shell Height (ft):	45.00
Diameter (ft):	100.00
Liquid Height (ft) :	39.00
Avg. Liquid Height (ft):	21.00
Volume (gallons):	2,100,000.00
Turnovers:	24.00
Net Throughput(gal/yr):	50,400,000.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Roof Characteristics

Type:	Dome
Height (ft)	2.00
Radius (ft) (Dome Roof)	100.00

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig)	0.03

Meteorological Data used in Emissions Calculations: Portland, Oregon (Avg Atmospheric Pressure = 14.75 psia)

TANKS 4.0.9d
Emissions Report - Summary Format
Liquid Contents of Storage Tank

W206 - Vertical Fixed Roof Tank

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F)			Liquid Bulk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
		Avg.	Min.	Max.		Avg.	Min.	Max.					
Jet A	All	55.06	50.48	59.64	53.57	0.0073	0.0061	0.0084	130.0000			130.00	Option 1: VP50 = .006 VP60 = .0085

TANKS 4.0.9d
Emissions Report - Summary Format
Individual Tank Emission Totals

Emissions Report for: Annual**W206 - Vertical Fixed Roof Tank**

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Jet A	1,133.36	384.32	1,517.69

TANKS 4.0.9d
Emissions Report - Summary Format
Tank Identification and Physical Characteristics

Identification

User Identification:	W207
City:	
State:	
Company:	
Type of Tank:	Vertical Fixed Roof Tank
Description:	Proposed new FIXTANK

Tank Dimensions

Shell Height (ft):	45.00
Diameter (ft):	100.00
Liquid Height (ft) :	39.00
Avg. Liquid Height (ft):	21.00
Volume (gallons):	2,100,000.00
Turnovers:	24.00
Net Throughput(gal/yr):	50,400,000.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Roof Characteristics

Type:	Dome
Height (ft)	2.00
Radius (ft) (Dome Roof)	100.00

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig)	0.03

Meteorological Data used in Emissions Calculations: Portland, Oregon (Avg Atmospheric Pressure = 14.75 psia)

TANKS 4.0.9d
Emissions Report - Summary Format
Liquid Contents of Storage Tank

W207 - Vertical Fixed Roof Tank

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F)			Liquid Bulk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
		Avg.	Min.	Max.		Avg.	Min.	Max.					
Jet A	All	55.06	50.48	59.64	53.57	0.0073	0.0061	0.0084	130.0000			130.00	Option 1: VP50 = .006 VP60 = .0085

TANKS 4.0.9d
Emissions Report - Summary Format
Individual Tank Emission Totals

Emissions Report for: Annual**W207 - Vertical Fixed Roof Tank**

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Jet A	1,133.36	384.32	1,517.69

TANKS 4.0.9d
Emissions Report - Summary Format
Total Emissions Summaries - All Tanks in Report

Emissions Report for: Annual

Tank Identification		Losses (lbs)
PGEH1	Vertical Fixed Roof Tank ,	3,752.71
PGEH2	Vertical Fixed Roof Tank ,	3,718.47
W200	Internal Floating Roof Tank ,	6,684.15
W201	Internal Floating Roof Tank ,	6,684.15
W202	Internal Floating Roof Tank ,	5,472.53
W203	Internal Floating Roof Tank ,	5,472.53
W204	Vertical Fixed Roof Tank ,	2,366.80
W205	Vertical Fixed Roof Tank ,	2,366.80
W206	Vertical Fixed Roof Tank ,	1,517.69
W207	Vertical Fixed Roof Tank ,	1,517.69
Total Emissions for all Tanks:		39,553.53